TES-3080-M12

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Industrial EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector

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Industrial Ethernet Switch

Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Fastest Redundant Ethernet Ring: **O-Ring** (recovery time < 10ms over 250 units of connection)
- **Open-Ring** supports the other vendor's ring technology in open architecture
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- **O-Chain** allow multiple redundant network rings
- STP/RSTP:2004/MSTP supported
- Support IPV6 new internet protocol version
- Supports **PTP Client** (Precision Time Protocol) clock synchronization
- Provided HTTPS/SSH protocol to enhance network security
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Port Trunking for easy of bandwidth management
- SNMP v1/v2c/v3 support for secured network management
- RMON for traffic monitoring
- Supports LLDP protocol
- Support TACACS+ and 802.1x User Authentication for security
- Port lock to prevent access from unauthorized MAC address
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Windows utility (**Open-Vision**) supports centralized management and configurable by Web-based ,Telnet, and Console (CLI)
- M12 connectors to guarantee reliable operation against environmental disturbances
- Wall mounting enabled

Introduction

ORing's Transporter series managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TES-3080-M12 is the managed Redundant Ring Ethernet switch with 8x10/100Base-T(X) ports which is compliant with EN50155 standard. With complete support of Ethernet Redundancy protocol, **O-Ring** (recovery time < 10ms over 250 units of connection), **Open-Ring**, and MSTP/RSTP:2004/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology.
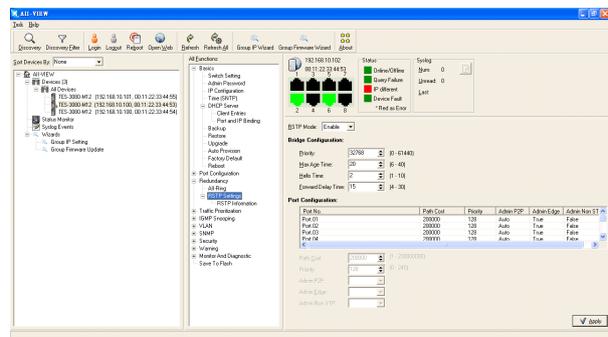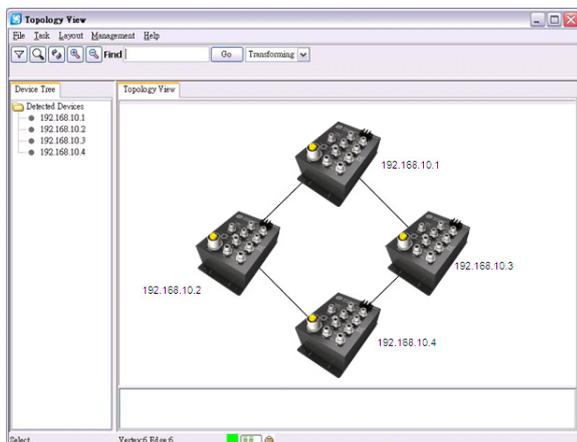
TES-3080-M12 EN50155 Ethernet Switch is specifically designed for the toughest industrial environments. It uses M12 connectors to ensure tight and robust connections, plus it guarantees reliable operation against environmental disturbances, such as vibration and shock. Additionally, the **Open-Ring** technology is also supported which can applied for other vendor's proprietary ring. Network management on TES-3080-M12 is centralized and convenient via the powerful windows utility ~ **Open-Vision**. In addition, the wide operating temperature range from -40℃ to 70℃ can satisfy most of operating environments. Therefore, the TES-3080-M12 Ethernet switch is one of the most reliable choices for rolling stock and highly-managed Ethernet applications.

Practical Operation
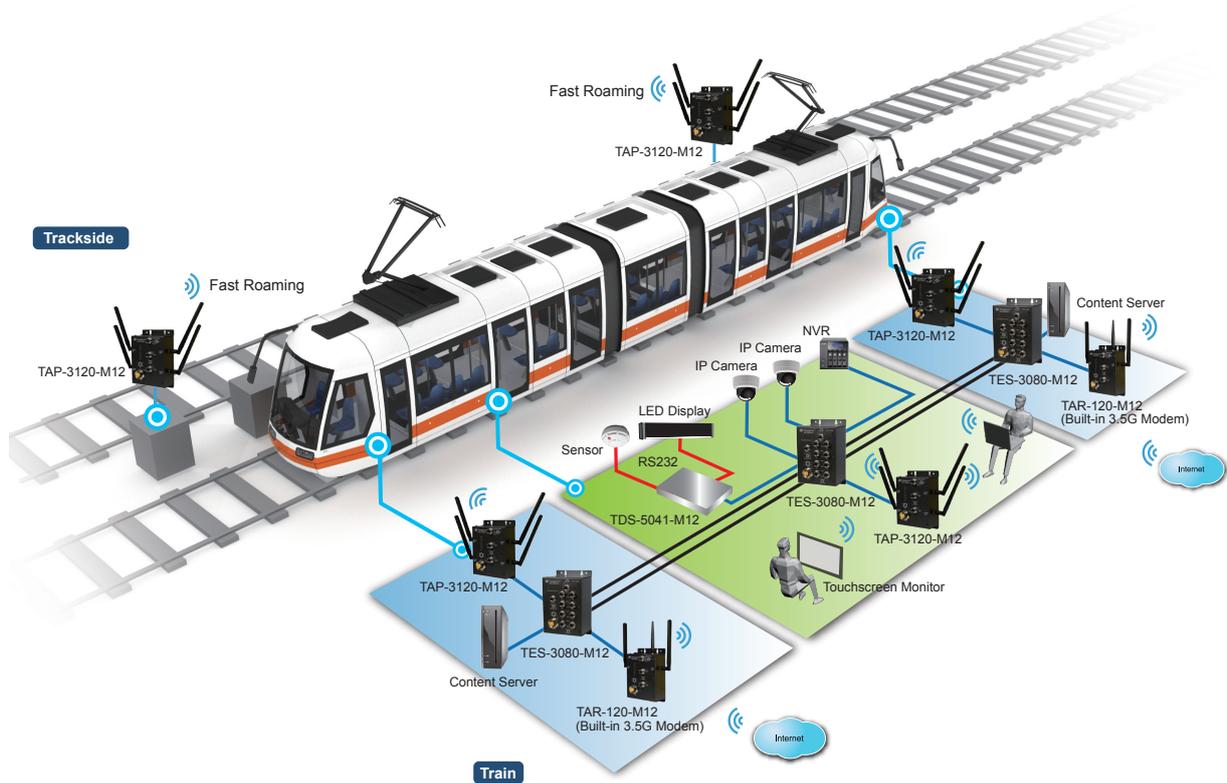
Open-Vision

ORing's switches are intelligent switches. Being different from other traditional redundant switches, ORing provides a set of Windows utility (**Open-Vision**) for users to manage and monitor all of industrial Ethernet switches on the industrial network.

Industrial Ethernet Switch

Industrial Media Converter

Industrial Device Server

Industrial Wireless Access Point

Industrial Cellular VPN Router

Industrial M2M Gateway

Accessories

Network Management Software

Dimensions
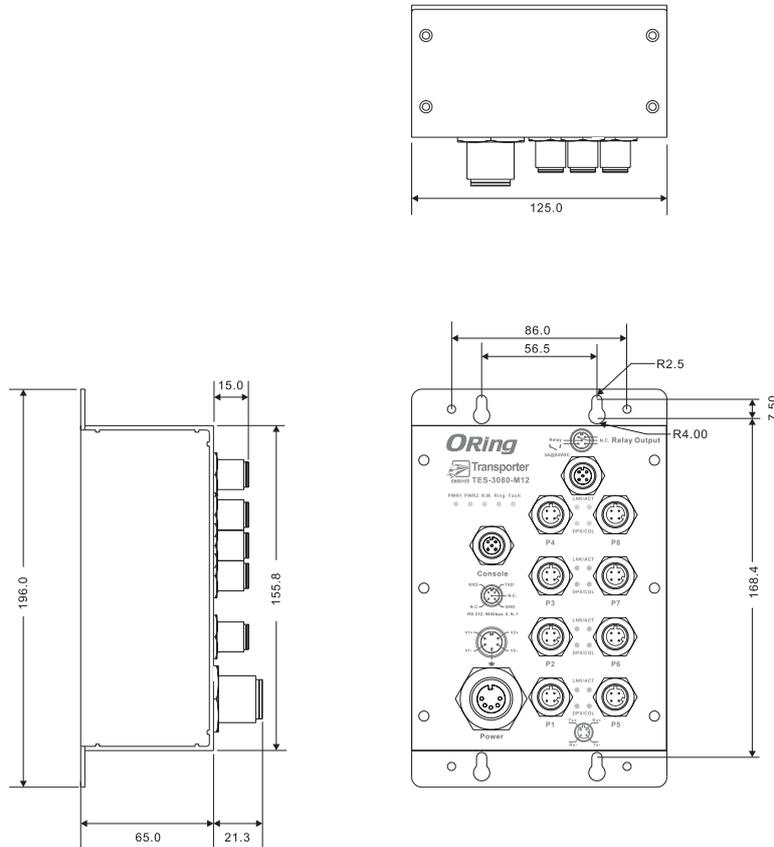
(Unit=mm)

Specifications

ORing Switch Model	TES-3080-M12
Physical Ports	
10/100 Base-T(X) Ports in M12 (D-coding) Auto MDI/MDIX	8 x M12 connector (D-coding)
RS-232 Serial Console Port	RS-232 in M12 connector (A-coding). Baud rate setting: 9600bps, 8, N, 1
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1D-2004 for RSTP:2004 (Rapid Spanning Tree Protocol 2004) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 μs Switching bandwidth: 1.6Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Define

Security Features	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMP v1/v2c/v3 encrypted authentication and access security Https / SSH enhance network security
Software Features	STP/RSTP:2004/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Supports **PTP Client** (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support Modbus TCP
Network Redundancy	O-Ring Open-Ring O-Chain STP RSTP:2004 MSTP
Warning / Monitoring System	Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support

LED Indicators

Power Indicator	Green : Power LED x 2
R.M. Indicator	Green : Indicates that the system is operating in O-Ring Master mode
O-Ring Indicator	Green : Indicates that the system is operating in O-Ring mode
Fault Indicator	Amber : Indicates unexpected event occurred
10/100Base-T(X) M12 Port Indicator	Green for port Link/Act. Amber for Duplex/Collision

Fault Contact

Relay	Relay output to carry capacity of 3A at 24VDC(M12 connector with A-coding)

Power

Redundant Input Power	Dual 12~48VDC on 5-pin M23 connector
Power Consumption (Typ.)	5 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present

Physical Characteristics

Enclosure	IP-30
Dimensions (W x D x H)	125 (W) x 65 (D) x 196 (H)mm (4.92 x 2.56 x 7.72 inch)
Weight (g)	896 g

Environmental

Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 70°C (-40 to 158°F)
Operating Humidity	5% to 95% Non-condensing

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Industrial Wireless Access Point

Industrial Cellular VPN Router

Industrial M2M Gateway

Accessories

Network Management Software

Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27, EN61373
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6, EN61373
Safety	EN60950-1
Warranty	5 years

Ordering Information

TES-3 [AA] [B] -M12

Code Definition	10/100Base-T(X) Port Number	Additional Port Number
Option	**- 08:** 8 ports	**- 0:** 0 port

Available Model	Model Name	Description
	TES-3080-M12	EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector

Packing List
- TES-3080-M12
- ORing Tool CD
- Quick Installation Guide

Optional Accessories (Can be purchased separately)
- Open-Vision M500, Powerful Network Management Windows Utility Suite, 500 IP devices
- DR-45 series : 45 Watts DIN-Rail power supply
- DR-75 series : 75 Watts DIN-Rail power supply
- DR-120 series : 120 Watts DIN-Rail power supply
- SDR-240-48, 240W DIN-Rail power supply
- SDR-480-48, 480W DIN-Rail power supply
- M12C : M12 cable accessories